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ABSTRACT

The Wake County (North Carolina) Public School System first implemented Reading Recovery in 1990-91 and expanded the program in 1991-92. The goal of Reading Recovery is to provide intensive help to first graders having difficulty before their problems become too severe. Reading Recovery staff collected data, and the Chapter 1 evaluation specialist collected follow-up data for students after they left the program. Annual site reports by the Reading Recovery staff found positive short-term results for students who had received help both years. Seventy-seven percent of the 1990-91 and 73 percent of the 1991-92 students who completed the program were able to be discontinued successfully from the program. Students with a complete program showed greater gains in reading skills than did a comparison group. Results of the evaluation of long-term impact were somewhat more mixed, but generally positive. Students from the first cohort had lower special education placement rates and lower Chapter 1 placement rates in the second grade. Overall, the program seems quite promising, although teachers may need more information to recognize and capitalize fully on the skills Reading Recovery provides to students. Ways to increase the percentage of students who complete the Reading Recovery program are discussed. Fifteen figures present evaluation findings. The survey of student reading abilities is included. (SLD)

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A Study of the Long-Term Effectiveness of the Reading Recovery Program

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A STUDY OF THE LONG-TERM EFFECTIVENESS OF THE READING RECOVERY PROGRAM

REPORT SUMMARY

Authors: Jan Donley and Nancy Baenen

BACKGROUND

The Wake County Public School System (WCPSS) first implemented Reading Recovery in 1990-91 and expanded the program in 1991-92. The goal of this nationally recognized program is to provide intensive help to first graders who are having difficulty learning to read *before* problems become too severe. It is hoped that this preventative approach will eliminate, or substantially reduce, the need for future remedial help.

Reading Recovery staff collected data with the Clay Diagnostic Survey during the year students were involved. The Chapter 1 Evaluation Specialist collected follow-up data for the students served in 1990-91 and 1991-92 to measure their success after leaving the program. This included analyses of retention, special education, and regular Chapter 1 program participation rates as well as surveys of second grade teachers' perceptions of 1990-91 students regarding their reading performance (as of spring, 1992). All analyses included comparison groups of similar students.

MAJOR FINDINGS

1. Annual site reports by Reading Recovery staff found positive short-term results for both cohorts of students served.

   - Seventy-seven percent and 73% of the 1990-91 and 1991-92 Reading Recovery students who completed the program, respectively, were able to be discontinued successfully from the program.

   - Reading Recovery students with a complete program showed greater gains in reading skills than the comparison group students. Half of the 1990-91 and two thirds of the 1991-92 Reading Recovery students were within the WCPSS average range for the Text Reading Level subtest of the Diagnostic Survey at the end of first grade, compared to 15% of the non-program comparison group.

2. Results of E&R's analyses were somewhat more mixed, but generally positive, regarding Reading Recovery's long-term impact. Students who completed Reading Recovery, relative to comparison groups of similar students:

   - Had lower special education placement rates for the 1990-91 cohort, but not for the 1991-92 cohort.

   - Had significantly lower Chapter 1 placement rates at the second grade level. (Data were available only for the 1990-91 cohort.)

   - Had significantly lower retention rates for the 1991-92 cohort, but not the 1990-91 cohort. (Actual 1990-91 rates were lower, but few students were retained in either Reading Recovery or the comparison group.)

   - Were seen by second grade teachers as slightly better, but not significantly so, in terms of reading performance in class (1990-91 cohort). Fifty-five percent of Reading Recovery and 65% of non-program students were in the "low" reading group as of spring, 1992. It is important to note that these data do not provide a direct measure of student reading achievement, but rather represent teachers' perceptions of these students' reading performance in their classroom.

3. About one fourth of those served by Reading Recovery each year did not receive a complete program. In most long-term follow-up analyses, these students did not fare better than non-program students. One notable exception was that 1991-92 students receiving 30 lessons or less were referred to special education less often than non-program students or Reading Recovery completers. This finding may reflect the participation of many of these students in the Early Reading program while waiting for a Reading Recovery opening.

ISSUES AND CONCERNS

While the short-term Reading Recovery results were quite positive, and long-term results fairly positive, there are at least three areas for concern and possible follow-up. The program itself seems quite promising, but regular classroom teachers may need more information to fully capitalize on the skills that Reading Recovery participation provides to students. One area which should be addressed is the lack of difference in special education placements in second grade for the 1991-92 Reading Recovery students compared to non-program comparison students. While Reading Recovery cannot have been expected to impact *all* of the reasons for special education referrals, at least some impact should have been detected.

A second concern is the second grade teachers' perceptions that many former Reading Recovery students were functioning below average in reading, and the lack of statistically significant difference relative to similar students who were not served. It appears second grade teachers (and perhaps some first grade teachers) may not fully recognize or capitalize on the skills and strategies students learn through Reading Recovery. Although these survey results do not provide a direct measure of actual student reading achievement, they suggest that regular classroom first and second grade teachers need more information and help in recognizing and building on students' Reading Recovery success. A future long-term study might involve readministering the Diagnostic Survey to Reading Recovery and non-program comparison students at the end of second grade, and comparing classroom teachers' perceptions of these students' reading ability with their performance on the Diagnostic Survey.

Third, the percentage of Reading Recovery students who did not complete the program seemed somewhat high (about 25%), but this is comparable to a national Reading Recovery study. In WCPSS at least, this finding is partly the result of phasing students in as others are successfully exited. Program staff may want to consider whether it is wise to start students in the program if a full program, or at least a set minimum number of lessons, cannot be provided. Our study found less impact for these students, and a national study by Reading Recovery staff also found a lack of impact for an abbreviated Reading Recovery program (Groom, et al., 1992).

Alternatives may be to provide more training to first and second grade classroom teachers later in the spring (and not phase in new students after a certain point in the year), or to find ways to allow students who start late to complete the program (either in the spring, summer, or fall of grade 2).

The effectiveness of the Early Reading program, either alone or in combination with Reading Recovery, deserves further study. It may be that certain kinds of students could be identified that would benefit as much from the small-group Early Reading approach as the individual Reading Recovery lessons. (Both use Reading Recovery techniques.) Because the group approach is less expensive, this could help stretch tight resources and reach more students.

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PROGRAM OVERVIEW

BACKGROUND

Traditional approaches to help children having difficulty learning to read have given children time to mature so that they could learn to read when they were developmentally ready (Pinnell, DeFord, & Lyons, 1988). After first grade, students with insufficient reading skills were either retained in grade or were provided with compensatory education. Unfortunately, retention in grade and traditional compensatory education practices like pullout Chapter 1 programs are frequently ineffective in bringing students up to grade level in reading (Slavin & Madden, 1989). The ineffectiveness of these approaches is probably a result of attempting to remediate students *after* they have already encountered problems learning to read and have likely developed negative attitudes about the process of reading because of repeated failure experiences (Slavin, 1991).

Many researchers and practitioners have suggested that it is critical to prevent reading problems by providing intensive resources for first grade children who experience difficulty reading. One program that provides such services is Reading Recovery. This early intervention program attempts to reach first graders who are experiencing the greatest difficulty learning to read and provide them with services to help them catch up *before* they develop a pattern of school failure (Pinnell, et al., 1988).

PROGRAM DESCRIPTION

The goal of Reading Recovery is to help the lowest achieving 20% of first grade children become independent readers who use their own knowledge to solve problems they encounter during reading (Pinnell, Fried, & Estice, 1990). Teachers are trained in Reading Recovery techniques through an intensive, year-long inservice program in which they simultaneously work with children who need Reading Recovery services. During training, teachers enrich their knowledge of the reading process and diagnostic procedures used for accurate assessment of students' progress in learning to read.

Reading Recovery teachers first use individual diagnostic procedures to identify students who will need help with reading. These teachers then develop individualized intervention procedures to help these students become independent readers and catch up with their average peers. Reading Recovery teachers provide daily 30-minute lessons until the child is capable of performing within the average range of his or her first grade classroom; once children exhibit this capability, they are discontinued from Reading Recovery services. Teachers make informed decisions to accelerate children's progress by closely assessing and monitoring their reading behavior as they move through the lessons. The instructional

approach combines the use of related reading and writing experiences, close interaction between teachers and children during lessons, and selection of appropriate reading materials.

RESEARCH BASIS FOR READING RECOVERY

Reading Recovery teachers keep extensive records on children they serve. The Reading Recovery program is part of the National Diffusion Network (NDN) and has been validated in many studies conducted nationally. The Reading Recovery program was developed and pilot tested in New Zealand in 1979 by researchers working with Dr. Marie Clay (Clay, 1985). Initial studies of the effectiveness of the program demonstrated that over 90% of children who had a complete Reading Recovery program were able to reach the average levels of their classmates, and appeared to have developed an independent system of reading. The instrument used both to provide appropriate instruction and to evaluate the program is the Diagnostic Survey (Clay, 1985). Follow-up studies of these students indicated that these children continued to perform at average reading levels three years after services had been discontinued.

In the 1991-92 school year, 74% of students served by Reading Recovery teachers nationally received complete programs. Eighty-four percent of students with a complete program were successfully discontinued from the program (Groom, et al., 1992).

Recent research at Ohio State University (Pinnell, et al., 1988) compared two cohorts of first grade children served by Reading Recovery to matched control groups of children through the end of the third grade. At the end of first grade, Reading Recovery students who completed the program scored significantly higher than control students on the Stanford Reading Test. To follow children longitudinally, the Test Reading Level portion of the Diagnostic Survey (Clay, 1985) was administered at the end of grades two and three. Reading Recovery children continued to significantly out-perform control children through the end of grade three, although effects diminished over time. Reading Recovery children were also less likely than control children to fail a grade up through the end of third grade. Research with a later cohort of Reading Recovery children demonstrated similar findings (DeFord, Pinnell, Lyons, & Young, 1987).

Another Ohio State University study conducted in 1988 compared the effectiveness of the Reading Recovery program with three other methods used to correct reading difficulties. A total of 324 first graders who had tested as the lowest readers in their classes were assigned to one of four intervention programs or a control group representing traditional practice. The first intervention program was Reading Recovery with trained teachers. The second program was led by teachers trained in an abbreviated Reading Recovery program. In the third intervention program, students interacted one-on-one with experienced reading teachers who did not use Reading Recovery techniques. In the fourth program, trained Reading Recovery teachers led group sessions instead of private lessons. Each program had its own

control group, which relied on skill drills and worksheets. Remedial instruction lasted 70 days for each of the first four groups and the entire school year for the control classes. The study concluded that Reading Recovery completers out-performed children from an equivalent control group and the three other intervention programs. In addition, Reading Recovery was the only intervention program that had lasting effects through the beginning of grade 2 (Groom, et al., 1992).

These results indicate that the Reading Recovery model can have significant positive effects on the reading achievement of first grade children. Although the effects diminish somewhat over time, a positive impact continues even at the end of third grade in the absence of any special interventions in grades two and three. As a result of these research studies, the Reading Recovery program is being used in numerous sites across the nation as an early intervention program for students at risk of failure in reading.

THE READING RECOVERY PROGRAM IN WCPSS

WCPSS began implementing the Reading Recovery program in fall, 1990. The 1990-91 school year was considered a pilot year because of the delayed beginning of the program; students did not begin receiving services until October, 1990. The first grade model used previously by Chapter 1 involved traditional pullout instruction with first grade students who had been retained. Twelve Chapter 1 teachers in ten qualifying Chapter 1 schools provided Reading Recovery services during the first year of implementation. Each teacher spent one half day working with individual first graders on Reading Recovery lessons and one half day teaching regular Chapter 1 groups. These Reading Recovery teachers also participated in a graduate-level course which included 33 training sessions from September, 1990, to June, 1991. A total of 84 students received some level of Reading Recovery service during the 1990-91 school year.

During the second year of implementation (1991-92), the Reading Recovery program was expanded to include 20 Chapter 1 schools, and 12 additional Chapter 1 teachers received Reading Recovery training and provided Reading Recovery services. In addition, the Early Reading program was implemented for the first time to provide service to first grade students in small groups who were eligible for Reading Recovery but were on a waiting list to receive services. The Reading Recovery teacher taught both Reading Recovery lessons and Early Reading program groups. Early Reading program instruction was similar to Reading Recovery instruction, and centered around teaching students concepts about print and strategies that successful readers use during the reading process. Students received service in the Early Reading program until space became available for Reading Recovery instruction, *or* until they were able to effectively employ reading strategies and were reading at a satisfactory level in the regular classroom. One school in the program, Baucom, did not have an Early Reading program due to its non-Chapter 1 status. A total of 143 students received some level of Reading Recovery service during the 1991-92 school year.

For the third year of implementation (1992-93), the Reading Recovery program has been further expanded to include 32 Chapter 1 schools and four non-Chapter 1 schools, and 18 additional teachers are receiving Reading Recovery training and providing Reading Recovery services. In addition, the Early Reading program is being provided in all Chapter 1 Reading Recovery schools in a manner similar to the model provided in 1991-92.

EVALUATION DESIGN

SHORT-TERM FOLLOW-UP

The Reading Recovery program is part of the National Diffusion Network (NDN), and therefore must be evaluated annually by program staff using the approved NDN research design. This design involves systematically comparing the performance of students receiving a complete Reading Recovery program with a random sample of first grade students using the Clay Diagnostic Survey for the year of program service. *Students are considered to have had a complete program if they have had at least 60 Reading Recovery lessons or were successfully discontinued from the program prior to having 60 lessons.* Students are "discontinued" (provided no further services) if they demonstrate reading skills on grade level based on the Clay Diagnostic Survey. The NDN model does not include any students in the analyses who do not complete 60 lessons and are not successfully discontinued.

For comparison purposes, a random sample of students from each Reading Recovery site is selected for Diagnostic Survey testing to create a "site random band," or an average band of reading achievement levels at the end of first grade. The average band is then calculated by determining 0.5 standard deviations above and below the mean for all students in the random sample. The average band is used to determine whether Reading Recovery students have moved into the average or above average range at the end of first grade. In addition, the group of Reading Recovery students is divided into a group of students who were successfully discontinued from the program (discontinued group) and those who received at least 60 lessons but who were not discontinued from the program (non-discontinued group) to determine success rates for different types of Reading Recovery students.

The three measures used within the Diagnostic Survey for the research design are Text Reading Level, Dictation, and Writing Vocabulary. The Writing Vocabulary subtest requires students to write all the words they know within a ten-minute time limit. The Dictation subtest involves the teacher reading a sentence, and students writing the words as it is read. For the Text Reading Level subtest, students read text materials in graded levels of difficulty, and their text reading level indicates the highest level of text that can be read at 90% accuracy or above.

WCPSS decided to extend the NDN evaluation model by including a comparison group of similar low achievers who were not served by Reading Recovery. In 1990-91, a control group was established within the same Reading Recovery schools by serving every other eligible student. In 1991-92, a comparison group of students in non-Reading Recovery schools was used who could have qualified for Reading Recovery if they had the program available to them. The Clay Diagnostic Survey was administered to all non-program comparison students to allow comparisons of their performance to that of Reading Recovery students.

LONG-TERM FOLLOW-UP

RETENTION, CHAPTER 1, AND SPECIAL EDUCATION STATUS

The Chapter 1 evaluation specialist compared the performance of Reading Recovery and non-program comparison students to determine the long-term impact of the Reading Recovery program. For the 1990-91 cohort of students, the mainframe student database provided information for the following school year (1991-92) to determine how many students in each group had been retained or had been promoted to second grade. In addition, the database indicated whether these students were receiving either Chapter 1 services or some type of special education program services as second graders. This analysis is being repeated in 1992-93 when these children are in third grade. The 1991-92 cohort of students is also being followed in a similar fashion to determine if they are receiving special education or were retained as first graders following the 1991-92 school year.

In addition to analyzing results for the Reading Recovery students with a complete program (called Reading Recovery program students) and the non-program comparison students, we also examined the retention, special education, and Chapter 1 status of students who received Reading Recovery services but did *not* complete the program. These students were divided into those who left the program with 30 lessons or more (at least 15 hours of instruction) or less than 30 lessons. Students "left" the program early for any of the following reasons: 1) transferred with less than 60 lessons, 2) were in the program at the end of the year with less than 60 lessons, 3) withdrew to special programs, or 4) withdrew with either more or less than 60 lessons for some other reason. Definitions of all groups included in these analyses are shown on the next page.

SURVEY INFORMATION

Norm-referenced tests are not administered at the second grade level in WCPSS except to students who are considered potentially eligible for Chapter 1 or gifted services. Therefore, to obtain a measure of reading performance, second-grade classroom teachers who taught the 1990-91 cohort of Reading Recovery completers and non-program comparison group students completed a survey in April, 1992, concerning these students' performance as readers within their classroom during the 1991-92 school year. Questions focused on the students' level of performance relative to others in the class (e.g., middle reading group versus low reading group) as well as how they performed in different areas of reading (e.g., vocabulary versus comprehension). Although the survey information does not provide a direct measure of student reading performance, it does provide information on teachers' perceptions of students' ability (which *can* impact student performance).

GROUP DEFINITIONS

Throughout this report, the following terms are used to refer to Reading Recovery and comparison groups of students.

READING RECOVERY STUDENTS

Completers: Students who received a complete program by having at least 60 Reading Recovery lessons and/or were successfully discontinued from the program. Students are *"discontinued"* from program services when they successfully show on-grade level reading skills based on the Clay Diagnostic Survey. Other students who complete 60 lessons but are unable to successfully read on a level equal to or better than average first graders are called *non-discontinued* students. For short-term analyses involving results from the site report, these students are described simply as Reading Recovery students, but for long-term analyses these students will be referred to as Reading Recovery "completers."

Non-Completers: Students served by Reading Recovery who did not receive a complete program because they 1) transferred with less than 60 lessons, 2) were in the program at the end of the year with less than 60 lessons, 3) withdrew to special education programs, or 4) withdrew with either more or less than 60 lessons for some other reason. These students were divided into two groups: those who received less than 30 Reading Recovery lessons, and those who received more than 30 Reading Recovery lessons.

NON-PROGRAM COMPARISON STUDENTS

Random Band: Randomly selected first graders in Reading Recovery schools used as a comparison group in NDN studies. These students are given the Clay Diagnostic Survey in the spring to determine the "average band" of first grade reading performance.

Non-Program Comparison: Students in the control group in 1990-91 or the comparison group in 1991-92. The control group in 1990-91 included students in the same school who qualified and were not served on an alternating basis to check program effects. The 1991-92 students were in schools comparable to Reading Recovery schools in which the Reading Recovery program was not available.

Results from these follow-up analyses and a brief description of the results from the NDN required evaluation are provided in the next sections. These sections will cover the following: 1) highlights from the program staff's report from the one-year NDN evaluation; 2) the long-term impact of Reading Recovery on 1990-91 students; and 3) a similar description of results for the 1991-92 cohort of students.

EVALUATION RESULTS: 1990-91 COHORT

SUMMARY OF FINDINGS

The major findings from the evaluation of the 1990-91 cohort were:

- Diagnostic Survey results indicated that Reading Recovery completers were performing at higher levels than non-program comparison students on all subtests at the end of first grade, and more were meeting or exceeding the average band for the first grade.

- Reading Recovery completers were somewhat less likely to be retained at the end of first grade than non-program comparison students, but the small number of retainees limits the conclusions which can be drawn. Both groups of non-completers (less than and more than 30 lessons) were more likely to be retained both years than either Reading Recovery completers or non-program comparison students, but the difference was not statistically significant.

- Reading Recovery completers were less likely than non-program comparison students to receive special education services in subsequent years: 6% of Reading Recovery completers and 12% of non-program comparison students received special education services in 1991-92 or 1992-93. In 1991-92, non-completers with less than 30 lessons were more likely than both Reading Recovery completers and non-program comparison students to receive special education services, but only the comparison with Reading Recovery completers was significant. In 1992-93, non-completers with less than 30 lessons were significantly more likely than completers and non-program comparison students to receive special education services.

- Reading Recovery completers were significantly less likely than non-program comparison students to receive Chapter 1 service in 1991-92: 33% of completers participated in Chapter 1, while 51% of non-program comparison students participated in Chapter 1. Both groups of non-completers were similar to Reading Recovery completers in terms of Chapter 1 participation rates.

- Second grade teacher survey results were somewhat equivocal. No consistent differences emerged between Reading Recovery and non-program comparison groups in terms of teacher reports of reading performance. However, there was a consistent difference favoring discontinued over non-discontinued Reading Recovery students on all items addressed in the survey.

SHORT-TERM FOLLOW-UP

The WCPSS site report (Hundley, 1991) was prepared by Reading Recovery program staff and focused on the discontinuation rate of Reading Recovery students and on Diagnostic Survey results in spring, 1991, for Reading Recovery and non-program comparison group students. Reading Recovery students were considered to be any students who had at least 60 lessons and/or who were discontinued from the program. Non-completers were not included in analyses for the WCPSS site report. Key findings from the WCPSS Reading Recovery 1990-91 site report were:

- Seventy-seven percent of students who had a complete Reading Recovery program were successfully discontinued from the program.

- Scores for Reading Recovery students were lower than those for the non-program comparison group of students in the fall (pretest), but higher in the spring (posttest) for both the Writing Vocabulary and Dictation subtests of the Diagnostic Survey.

- Reading Recovery completers were reading on a level approximately equivalent to the end of the first grade reader; non-program comparison group students read at a level comparable to the third pre-primer based on the Text Reading subtest of the Diagnostic Survey.

- On the average, Reading Recovery completers were able to read within the average band for WCPSS first graders, while non-program students were not. The percentage of Reading Recovery students who scored equal to or higher than the site average band on the posttest was 80% for Writing Vocabulary, 61% for Dictation, and 49% for the Text Reading subtest. The percentages for non-program comparison students was much lower (45% for Writing Vocabulary, 35% for Dictation, and 15% for the Text Reading subtest).

- When the group of Reading Recovery completers was divided into discontinued and non-discontinued students and the results for the two groups analyzed separately, results indicated that although non-discontinued students were able to achieve growth on each of the subtests of the Diagnostic Survey, their progress was not as accelerated as that of the discontinued students.

- All principals at Reading Recovery schools and 98% of parents of Reading Recovery students indicated on a survey that the Reading Recovery program was a good or very good program. In addition, 94% of classroom teachers at Reading Recovery schools responded that Reading Recovery was an effective program for reducing reading failure.

Overall, results for the first year of implementation of the Reading Recovery program were quite positive. However, program staff expressed concern regarding the number of non-discontinued program students who made gains from fall to spring, but who failed to reach reading levels that correlated with average first grade achievement. Reasons for the failure of these students to make sufficient progress were cited as: 1) teachers simultaneously providing instruction while learning how to implement Reading Recovery, 2) poor student attendance, and 3) need for long-term special programs assistance.

Based on the success of the Reading Recovery program in 1990-91, the decision was made to train additional Chapter 1 teachers and expand the program to additional schools. Recommendations were made to monitor more closely the progress of students not showing signs of making significant progress. It was planned that the teacher leader would be consulted when a Reading Recovery student was not beginning to progress by the 40th lesson. If necessary, a plan for improving instruction or referral to the school's assistance team would then be developed in cooperation with the classroom teacher. In addition, increased communication between the Reading Recovery teachers and other school staff was encouraged to deal with problems of poor attendance.

LONG-TERM FOLLOW-UP

SERVICE PROVIDED

The Reading Recovery site report emphasizes program outcomes for students receiving a complete program (those with at least 60 lessons and/or discontinued). However, because resources are also spent on students who only receive a partial Reading Recovery program (less than 60 lessons without discontinuation), E&R staff included these students in analyses. One question of interest was the completion rate for the program, i.e., the number and percent of students who left the program before completing Reading Recovery services and the amount of service received. The other major question was whether the Reading Recovery program had any long-term impact on these "non-completers" who received only a partial program.

Figure 1 shows that 61 (or 73%) of the 84 students served in 1990-91 received a complete program; 23 (or 27%) did not. Of the 23 "non-completers," most (74%) received 30 lessons (15 hours) of service or less. The reasons students left the program were varied. Of the non-completers:

1) Sixteen (70%) had fewer than 60 lessons at the end of the year;
2) Four transferred to other schools with less than 60 lessons;
3) Two withdrew to special education programs; and
4) One withdrew for another reason.

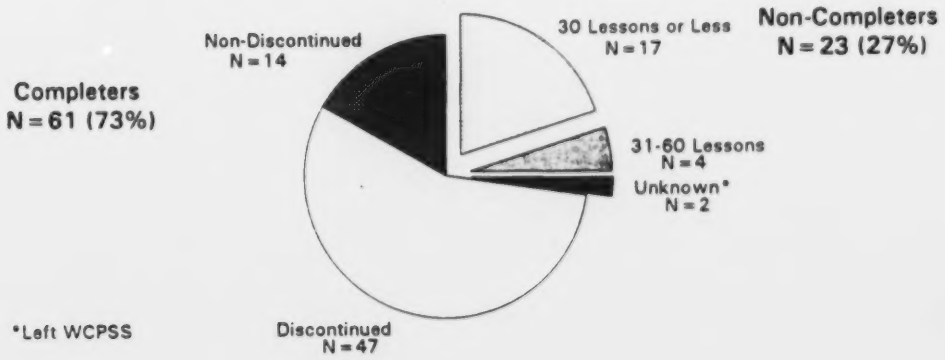
While a logical assumption for many supplementary programs would be that students receiving less service would be less likely to benefit, delivery methods in Reading Recovery make this assumption invalid. In fact, the opposite could also occur, because: 1) students in less need are served as others successfully leave the program, and therefore would be more likely to have fewer lessons, and 2) students who receive more lessons are likely to be those with the greatest need (others are discontinued sooner).

OVERVIEW OF ANALYSES

In order to obtain a complete picture of the impact of the Reading Recovery program, data analyses for retention, special education, and Chapter 1 status focused on two types of group comparisons. One set of analyses focused on comparing all Reading Recovery completers (successfully discontinued and non-discontinued students with at least 60 lessons) with non-program comparison students. In addition, differences among types of Reading Recovery students (discontinued versus non-discontinued) will be reported when group differences are large, and summary tables for these analyses are available upon request. The second set of analyses focussed on results for students who did not receive a complete Reading Recovery program (non-completers who received less than 60 lessons).

When statistically significant differences occurred between groups, Chi Square or Fisher's Exact (for small cell sizes) statistics will be reported. Figure 1 below illustrates the breakdown of the sample used for the analyses.

Figure 1
1990-91 All Reading Recovery Students Served



RETENTION

The retention policy in WCPSS indicates that decisions are made based on academic performance, developmental considerations, physical/social maturity, attitudes, and previous retention status (only one retention is allowed in grades K-5). Thus, a combination of objective and subjective criteria are used. In 1990-91, 1.9% of first graders and 0.87% of second graders were retained in WCPSS.

Figure 2 provides the frequency data on 1990-91 Reading Recovery and non-program comparison student retention rates following the 1990-91 and 1991-92 school years. Results from these analyses indicated:

- More non-program comparison group students than Reading Recovery completers were retained after 1990-91, but retention rates for the two groups were approximately the same after 1991-92.

- A greater percentage of both groups of non-completers were retained than Reading Recovery completers or non-program comparison students.

Retention rates for each group were not significantly different for 1990-91 retention, possibly because of the small number of children being retained in each group. Therefore, no definitive conclusions can be drawn as to whether the Reading Recovery program had an impact on student retention.

Figure 2. Retention Status for 1990-91 Reading Recovery Completers, Non-Completers, and Non-Program Comparison Students

	Retention Status After 1990-91		Retention Status After 1991-92		Total # Retained
	Yes	No	Yes	No	
Reading Recovery Students					
Completers (N=51)	1 (2%)	50 (98%)	2 (4%)	49 (96%)	3* (6%)
Non-completers (31 to 60 lessons) (N=4)	1 (25%)	3 (75%)	0 (0%)	4 (100%)	1 (25%)
Non-completers (30 or fewer lessons) (N=17)	2 (12%)	15 (88%)	1 (6%)	16 (94%)	3 (18%)
Non-Program Comparison Students (N=75)	4 (5%)	71 (95%)	3 (4%)	72 (96%)	7 (14%)

*Represents one discontinued and two non-discontinued students.

SPECIAL EDUCATION STATUS

Figure 3 provides the numbers and percentages of Reading Recovery and non-program comparison group students who received or are receiving special education services during the 1991-92 and 1992-93 school years. Some of the students received or are receiving special education services in both 1991-92 and 1992-93; therefore, an additional column has been added to the table to represent only the total number of *individual students* receiving special education in either 1991-92 or 1992-93.

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Figure 3. Special Education Status for 1990-91 Reading Recovery Completers, Non-Completers, and Non-Program Comparison Students

Reading Recovery Students	Special Education Status: 1991-92		Special Education Status: 1992-93		Total Number of Students Receiving Special Education (1991-92 or 1992-93)
	Yes	No	Yes	No	
Completers (N=51)	3 (6%)	48 (94%)	1 (2%)	50 (98%)	3* (6%)
Non-completers (31 to 60 lessons) (N=4)	1 (25%)	3 (75%)	1 (25%)	3 (75%)	1 (25%)
Non-completers (30 or fewer lessons) (N=17)	5 (29%)	12 (71%)	5 (29%)	12 (71%)	5 (29%)
Non-Program Comparison Students (N=75)	10 (13%)	65 (87%)	5 (7%)	70 (93%)	9 (12%)

*Represents two discontinued and one non-discontinued students.

These results demonstrate that *students in the non-program comparison group were more likely to receive special education services as second graders than were Reading Recovery students: overall, 12% of non-program comparison students received services, while only 6% of Reading Recovery students received services. The numbers of students receiving special education services declined in 1992-93 for both groups (when students were in third grade).*

Non-completers with 30 Reading Recovery lessons or less were significantly more likely to receive special education services than Reading Recovery students in both 1991-92 (Fisher's Exact Test, p=.01) and 1992-93 (Fisher's Exact Test, p=.003), but were not more likely than non-program comparison students to receive special education services in either school year.

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When the type of special education placement was examined, it was found that one Reading Recovery discontinued student received learning disability services and one received speech services, while the non-discontinued student received speech services. The student who was the non-completer with more than 30 lessons was receiving learning disability services, while of the non-completer group, two were receiving learning disability services, two were receiving speech services, and one was receiving educationally mentally handicapped services.

CHAPTER 1 STATUS

Students are eligible to receive Chapter 1 services if they score at or below the 49th percentile on the reading portion of the California Achievement Test (CAT). Figure 4 provides the numbers and percentages of Reading Recovery and non-program comparison students who received Chapter 1 services during 1991-92.

Figure 4. Chapter 1 Status for All Reading Recovery Students and Discontinued, Non-Discontinued, and Non-Program Comparison Students

	Participated in Chapter 1 in 1991-92	
Reading Recovery Students	Yes	No
Completers	17* (33%)	34 (67%)
Non-completers (31 to 60 lessons)	1 (25%)	3 (75%)
Non-completers (30 or fewer lessons)	5 (29%)	12 (71%)
Non-Program Comparison Students	38 (51%)	37 (49%)

*Represents 10 discontinued and 7 non-discontinued students.

In terms of Chapter 1 service in 1991-92, these data indicate that:

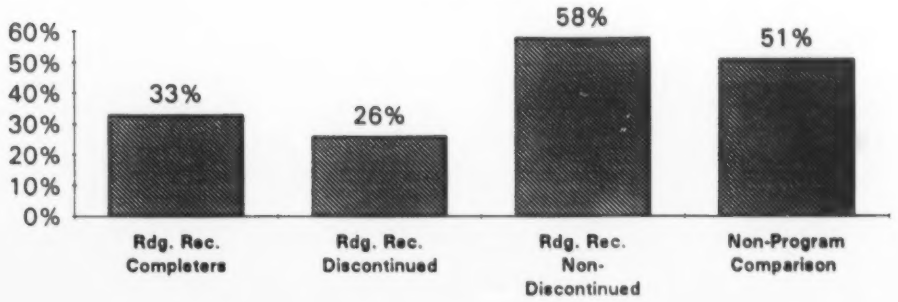
- Students with a complete Reading Recovery program were significantly less likely than the non-program comparison group to be served (Chi Square, $X=3.71$, $p=0.054$);

- Students who did not complete Reading Recovery had similar Chapter 1 service rates to Reading Recovery completers (which were lower than non-program comparison students but not significantly so);

- Within the Reading Recovery completers, those successfully discontinued were significantly ($X=4.41$, $p=0.036$) less likely to receive Chapter 1 than those not discontinued (see Figure 5); and

- Reading Recovery non-discontinued students had rates of service similar to non-program comparison students (see Figure 5).

Figure 5. Percentage of Reading Recovery Completers and Non-Program Comparison Students Participating in Chapter 1 in 1991-92



SECOND GRADE TEACHER SURVEYS

Second grade teachers of Reading Recovery and non-program comparison students were sent surveys in April, 1992, for each student that they currently had in their classrooms who was in the evaluation sample. (Reading Recovery non-completers were not included in the sample for teacher surveys.) They were not told the group status (Reading Recovery or non-program comparison) of any of these students. A copy of the survey can be found in the Appendix.

Reading Levels

Figure 6 provides the survey results for an item which asked second grade teachers to indicate students' beginning reading levels based on the information they received about the students at the beginning of the school year.

Figure 6. Teacher Survey Responses: Second Graders' Beginning Reading Level (Fall, 1991)

	Below Grade Level	On Grade Level
Reading Recovery Completers	74%	26%
Non-Program Comparison	90%	10%

Teachers indicated that, based on the information from first grade they received at the beginning of the school year, Reading Recovery students were more likely than non-program comparison students to enter second grade on grade level in terms of reading skill, and this difference was significant ($X = 4.095$, $p = 0.043$). Subsequent analyses indicated that significantly more Reading Recovery discontinued students than non-program comparison students were likely to have beginning reading levels that were on grade level ($X = 7.317$, $p = 0.007$). A significant difference favoring Reading Recovery discontinued students over non-discontinued students also existed ($X = 4.479$, $p = 0.034$), but no significant difference was found between non-discontinued and non-program comparison students in terms of beginning reading level.

It should be noted, however, that only 26% of the Reading Recovery students were considered "on grade level." This is somewhat puzzling in that 49% had text reading within the average band based on the Clay Diagnostic Survey results for Reading Recovery and random first graders the previous spring. It may be that first grade teachers conveyed this information incorrectly or that second grade teachers blended information received with their recollections of students' fall performance.

Teachers were also asked to report on their students' current reading level (as of April, 1992), and these results are provided in Figure 7.

Figure 7. Teacher Survey Responses: Students' Current Reading Level

	Below Grade Level	On Grade Level	Above Grade Level
Reading Recovery	43%	53%	5%
Non-Program Comparison	47%	51%	2%

These results suggest some improvement in teachers' perceptions of student performance for both groups and very little difference in terms of current reading levels between Reading Recovery and non-program comparison students: 53% of Reading Recovery and 51% of non-program comparison students were considered to be reading on grade level. When Reading Recovery discontinued and non-discontinued students were examined separately, discontinued students were more likely to be reading on grade level (59%) than non-discontinued students (25%). The definition of "on grade level" is problematic and may have varied across respondents. Some may have meant students were in any second grade reader (whether behind the class average or not), while others may have meant students had caught up to the average for the class.

Instructional Reading Groups

Teachers were also asked to indicate what reading group students were participating in when grouping practices were used. Figure 8 reports the instructional reading group participation for Reading Recovery and non-program comparison students.

Figure 8. Teacher Survey Responses: Student Participation in Reading Groups

	Low	Average	High
Reading Recovery	55%	36%	10%
Non-Program Comparison	65%	29%	5%

This figure shows that teachers reported that non-program comparison students were somewhat (10%) less likely than Reading Recovery students to participate in an average and high reading group, and more likely to participate in a low reading group than Reading Recovery students. However, these differences were not significant.

When survey responses were examined for Reading Recovery discontinued and non-discontinued students separately, results showed that 47%, 41%, and 12% of Reading Recovery discontinued students participated in the low, average, and high reading groups, respectively. The results for Reading Recovery non-discontinued students indicated that 88% of these students were in low reading groups, and only 13% were in average reading groups; there were no non-discontinued students participating in a high reading group.

Enjoyment of Reading

Teachers responded to an item which asked them to rate how much they believed students appeared to enjoy reading (see Figure 9).

Figure 9. Teacher Survey Responses: Student Enjoyment of Reading

	Less than Average	Average	More than Average
Reading Recovery	33%	40%	28%
Non-Program Comparison	41%	29%	29%

These results show that teachers believed that Reading Recovery students were more likely to enjoy reading an average amount (40%) than non-program comparison students (29%), and non-program comparison students were more likely to be viewed as enjoying reading less than average (41%) than Reading Recovery students (33%). None of these group differences were statistically significant.

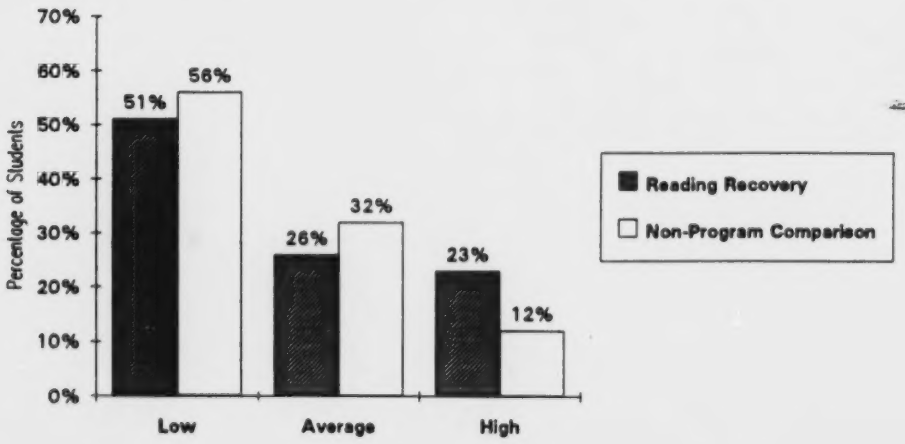
Reading Skill

Teachers were asked to rate students' reading skill level in three areas of reading on a scale from one to five; this scale was then collapsed for analysis purposes to derive categories of low, average, and high reading skill levels. Figures 10, 11, and 12 provide the results for

teachers' responses to students' skill in word analysis, vocabulary and comprehension, respectively.

Word Analysis. Figure 10 demonstrates that just over half (51%) of the Reading Recovery students were rated as having a low level of skill in word analysis, and 56% of non-program comparison students were given this rating. Somewhat more non-program comparison students (32%) than Reading Recovery students (26%) were rated as having an average level of skill in word analysis, while 23% of Reading Recovery students were rated as having a high level of skill in this area as compared to 12% of non-program comparison students.

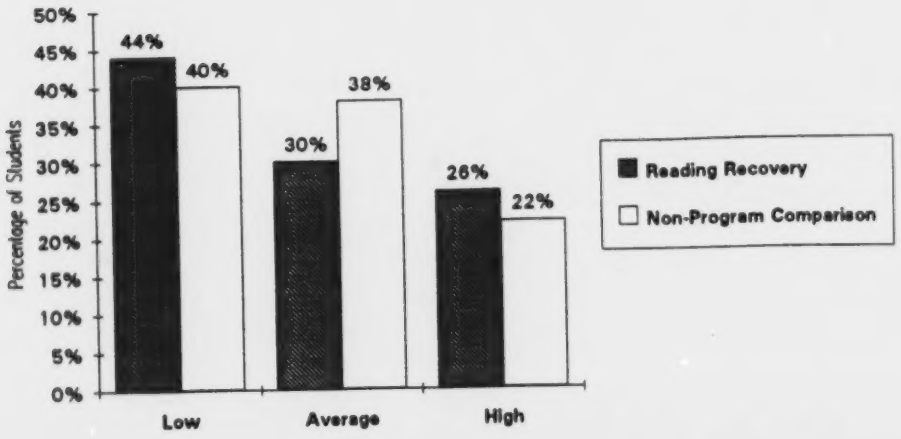
Figure 10. Reading Skill: Word Analysis



Separate results for Reading Recovery discontinued and non-discontinued students indicated that 45% of discontinued students were rated as having low levels of skill and 27% were rated as having average and high levels of skill in word analysis. For non-discontinued students, 70% were rated as having low levels of skill, 20% were rated as having average levels of skill, and 10% were rated as having high levels of skill in word analysis.

Vocabulary. Figure 11 shows teacher responses to rating students' skill level in vocabulary. Fewer students were rated as having a low level of skill in vocabulary than in word analysis, with 44% of Reading Recovery and 40% of non-program comparison students receiving this rating. More non-program comparison students were rated as having an average level of skill in vocabulary (38%) than Reading Recovery students (30%), while more Reading Recovery students were rated as having a high level of skill (26%) than non-program comparison students (22%).

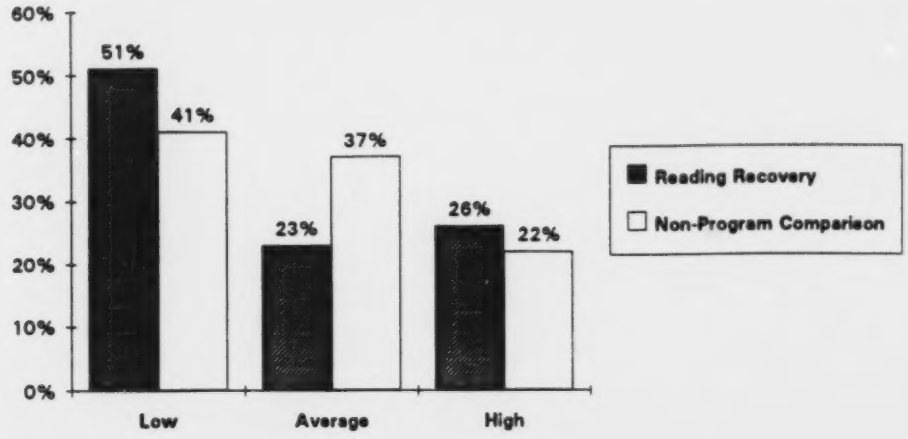
Figure 11. Reading Skill: Vocabulary



When results were examined separately for Reading Recovery discontinued and non-discontinued students, it was found that 33% of discontinued students were rated as having a low level of skill, 39% were rated as having an average level of skill, and 27% were rated as having a high level of skill in vocabulary. A total of 80% of non-discontinued students were rated as having a low level of skill and 20% were rated as having a high level of skill; no non-discontinued students were rated as having an average level of skill in vocabulary.

Comprehension. Figure 12 provides teacher responses when asked to rate students' skill level in comprehension. *Reading Recovery students' skill level in comprehension was rated somewhat similarly to their word analysis skills:* 51% were rated as having a low level of skill, 23% were rated as having an average level of skill, and 26% were rated as having a high level of skill in comprehension. *Fewer students in the non-program comparison group than in the Reading Recovery group were rated as having a low level of skill in comprehension* (41%), and more students in the non-program comparison group were rated as having an average level of skill (37%) than Reading Recovery students (23%) in comprehension.

Figure 12. Reading Skill: Comprehension



Reading Recovery discontinued students again fared better than non-discontinued students in terms of teachers' rating of their skill in comprehension. A total of 42% of discontinued students were rated as having a low level of skill, 30% were rated as having an average level of skill, and 27% were rated as having a high level of skill in comprehension. Results indicated that 80% of non-discontinued students were rated as having a low level of skill and 20% were rated as having a high level of skill in comprehension, and no non-discontinued students were rated as having an average level of skill in comprehension.

EVALUATION RESULTS: 1991-92 COHORT

SUMMARY OF FINDINGS

The major findings from the evaluation of the 1991-92 cohort were:

- Diagnostic Survey results indicated that Reading Recovery students (completers) were performing at higher levels than non-program comparison students on all subtests at the end of first grade, and more were meeting or exceeding the average band for the first grade.

- Reading Recovery completers were significantly less likely to be retained at the end of first grade than non-program comparison students. Non-completers were more likely to be retained than Reading Recovery completers.

- Special education rates are very similar for Reading Recovery and non-program comparison students. Non-discontinued Reading Recovery students were more likely to be receiving special education services than discontinued students, and non-completers with less than 30 lessons were less likely to be receiving special education than regular Reading Recovery students.

SHORT-TERM FOLLOW-UP

The WCPSS site report for 1991-92 again focused on the Diagnostic Survey results for Reading Recovery and non-program comparison students and on the discontinuation rate for Reading Recovery students (Hundley, 1992). Reading Recovery students again included any students who had at least 60 lessons and/or who were discontinued from the program (students with a complete program). Key findings from the 1991-92 site report were:

- Seventy-three percent of students who completed Reading Recovery were successfully discontinued from the program.

- Results from the Diagnostic Survey indicated that scores for Reading Recovery completers were lower than those for non-program comparison students in the fall (pretest), but higher in the spring (posttest) for both the Writing Vocabulary and Dictation subtests.

- At the end of first grade, the Text Level subtest indicated that Reading Recovery students (completers) were reading on a level approximately equivalent to the end of

the first grade reader, while non-program comparison students read at a level comparable to the third pre-primer.

- The percentage of Reading Recovery completers who scored equal to or exceeded the site average band on the posttest was 78% for Writing Vocabulary, 83% for Dictation, and 63% for the Text Reading Subtest. The percentages for non-program comparison students were somewhat lower for Writing Vocabulary (55%) and Dictation (61%), but much lower for Text Reading (24%) than for Reading Recovery students.

- When the group of Reading Recovery completers was divided into discontinued and non-discontinued students and the results for the two groups analyzed separately, results indicated that although non-discontinued students were able to achieve growth on each of the subtests of the Diagnostic Survey, their progress was not as accelerated as that of the discontinued students.

- All principals at Reading Recovery schools and 99% of parents of Reading Recovery students reported on a survey that Reading Recovery was a good or very good program. In addition, 94% of classroom teachers at Reading Recovery schools agreed that Reading Recovery was an effective program for reducing reading failure; 89% believed that Reading Recovery students were likely to continue to perform well in reading after the school year.

Results for the second year of implementation of the Reading Recovery program were again positive. Although the discontinuation rate declined slightly from 1990-91, students in Reading Recovery in 1991-92 performed somewhat better than students in 1990-91 on the Diagnostic Survey. A greater percentage of students in 1991-92 scored within the average band and larger gains were seen from pretest to posttest as compared with 1990-91 students. The Reading Recovery program was again expanded for 1992-93 to train more teachers and serve more schools.

Program staff again, however, expressed concern regarding the number of non-discontinued students who were not able to make the accelerated gains necessary to allow them to be reading on a first grade level. One reason cited for the failure of these students to make sufficient progress was that in-training teachers are simultaneously providing instruction while learning how to implement the program. Some students may have required an experienced Reading Recovery teacher who was better able to diagnose a problem more quickly and teach to that focus in order to accelerate student progress. The fact that trained Reading Recovery teachers discontinued a higher percentage of students than in-training teachers seems to support this possibility.

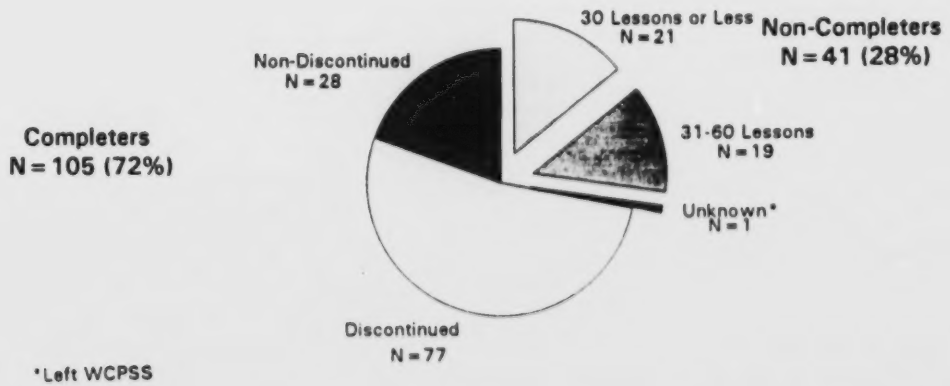
Poor program attendance was again cited as another possible reason for failure of some students to make sufficient gains; in fact, some of the non-discontinued students only attended Reading Recovery lessons three times weekly, and this may have inhibited accelerated growth. In addition, qualification for special programs services is another potential reason for the failure of non-discontinued students to make sufficient gains; 46% of these students tested at levels correlating with the first pre-primer in spring testing, and past program experience has indicated that these students are likely to qualify for EMH services the following year.

LONG-TERM FOLLOW-UP

SERVICE PROVIDED

Figure 13 describes the level of service provided and completion status for all students involved in Reading Recovery in 1991-92. The percentage of students who received a complete Reading Recovery program (72%) was quite similar to 1990-91. However, among the non-completers, a larger percentage of students received 30 lessons or more in 1991-92 than in 1990-91 (about half received 30 lessons or more in 1991-92 compared to about one fifth in 1990-91).

Figure 13
1991-92 All Reading Recovery Students Served



The addition of the Early Reading program qualitatively changed the nature of service for non-completers in 1991-92. Students on the Reading Recovery waiting list (those with less

with less need) were served in a group setting until an opening became available. Thus, most students in the 30 lessons or less category probably had this additional service. Because they had less need initially and had a combination of Early Reading group service and Reading Recovery individual service, it was not assumed that they would do less well in terms of long-term outcomes than either the Reading Recovery completers or those who received 31-60 lessons. It was considered possible that the 1991-92 non-completers would show somewhat better long-term results than the 1990-91 non-completers because of this additional service.

Students who did not complete the program fell into the following categories:

- Twenty-two (54%) were still in the program with less than 60 lessons at the end of the year;
- Nine (22%) had withdrawn to special education (eight were classified as learning disabled);
- Five (12%) transferred from a Reading Recovery school before receiving 60 lessons; and
- Six (15%) withdrew for other reasons (two with more than 60 lessons).

OVERVIEW OF ANALYSES

Progress of completers, non-completers, and non-program comparison students was tracked to determine one-year rates for retention and special education. Chapter 1 status for 1992-93 could not be checked because the database was not finalized. Data analyses focused on two types of group comparisons. One set compared all Reading Recovery completers (discontinued and non-discontinued students with at least 60 lessons) with non-program comparison students. In addition, differences among types of Reading Recovery students (discontinued versus non-discontinued) were examined, and will be reported when group differences are large (summary tables for these analyses are available upon request). The second set of analyses focused on comparing non-completers with completers and non-program comparison students. When statistically significant differences occurred between groups, Chi Square statistics will be reported.

RETENTION

Figure 14 shows the frequency data on 1991-92 Reading Recovery and non-program comparison student retention rates following the 1991-92 school year. These results demonstrate that:

- Non-program comparison students were significantly more likely than Reading Recovery completers to be retained at the end of first grade ($X = 12.67$, $p =$

While 21% of non-program comparison students were retained, only 4% of Reading Recovery students were retained following the first grade.

- The pattern of retention for non-completers more closely resembled the non-program comparison group of students: both groups of non-completers were more likely to be retained than Reading Recovery completers (more than 30 lessons: Fishers' Exact Test, p=.07; less than 30 lessons: Fishers' Exact p=.02).

Figure 14. Retention Status for 1991-92 Reading Recovery and Non-Program Comparison Students

	Retention Status After 1991-92	
	Yes	No
Reading Recovery Students		
Completers (N=101)	4* (4%)	97 (96%)
Non-completers (31 to 60 lessons) (N=19)	3 (16%)	16 (84%)
Non-completers (30 or fewer lessons) (N=21)	4 (19%)	17 (81%)
Non-Program Comparison Students (N=87)	18 (21%)	69 (79%)

*Represents two discontinued and two non-discontinued students.

SPECIAL EDUCATION STATUS

Figure 15 provides the numbers and percentages of Reading Recovery and non-program comparison group students who were receiving special education services during 1992-93. Of the group of Reading Recovery discontinued students, six were receiving learning disability services, five were receiving speech services, and one was classified as other health impaired. Of those who were non-discontinued, six were receiving learning disability services, two were receiving speech services, and one was receiving emotionally handicapped services. All of the non-completers in both groups were receiving learning disability services except one student, who was classified as other health impaired.

Figure 15. Special Education Status For 1991-92 Reading Recovery and Non-Program Comparison Students

	Special Education Status in 1992-93	
	Yes	No
Reading Recovery Students		
Completers (N=101)	22* (22%)	79 (78%)
Non-completers (31 to 60 lessons) (N=19)	8 (42%)	11 (58%)
Non-completers (30 or fewer lessons) (N=21)	2 (10%)	19 (90%)
Non-Program Comparison Students (N=87)	22 (25%)	65 (74%)

*Represents 13 discontinued and 9 non-discontinued students.

These results demonstrate that:

- Reading Recovery completers were participating in special education services at *approximately the same rate* as the non-program comparison students. When results were examined separately for Reading Recovery discontinued and non-discontinued students, 17% of discontinued, and 38% of non-discontinued students were participating in special education programs for the 1992-93 school year.

- Non-completers *with more than 30 lessons* were significantly *more* likely to be receiving special education services than Reading Recovery completers (Fishers' Exact, p=.06). However, non-completers *with less than 30 lessons* were *less* likely than Reading Recovery or non-program comparison students to be receiving special education services, but the difference was not statistically significant. This finding may be due to student participation in the Early Reading program. Most of the students with less than 30 lessons entered the program late after receiving Early Reading program services (see description on page 3), and may have benefitted from this instruction. On the other hand, non-completers with more than 30 lessons primarily consisted of students who exited Reading Recovery to special education programs.

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APPENDIX

SURVEY OF STUDENT READING ABILITIES

SURVEY OF STUDENT READING ABILITIES

Please complete one survey for this child who is currently in your class:

If you do not currently have this student in your class, please simply return the blank survey. Feel free to elaborate on any item; your comments are welcome and desired for each item. Return completed surveys to Jan Donley, Department of Evaluation & Research. We appreciate your cooperation!

Circle the response which most closely matches your perception:

1. According to the reading information you received on this child at the beginning of the school year, what was this child's reading level when he/she entered your classroom?

   Below Grade Level | **On Grade Level** | **Above Grade Level**

2. Currently, is this child reading:

   Below Grade Level | **On Grade Level** | **Above Grade Level**

3. In what type of reading program is this child participating?

   Basal | **Whole Language** | **Combo (Basal & Whole Language)** | **Other (comment)**

4. When you group your students for reading instruction, what reading group is this child in?

   Low | **Middle Low** | **Average** | **Middle High** | **High**

(over)

5. Describe this child's reading strengths.

6. Describe any areas this child needs improvement in as a reader.

7. How much do you believe this child enjoys reading?

Not at all	A little	An average amount	More than average	Very much

8. Rate on a scale from 1 to 5, this child's skill level in the following areas related to reading behavior:

	Low				High
Word analysis	1	2	3	4	5
Vocabulary	1	2	3	4	5
Comprehension	1	2	3	4	5